EXMOUTH

Urban District Council.

ANNUAL REPORT

OF THE

MEDICAL OFFICER

OF HEALTH

FOR THE YEAR 1907.

EXMOUTH :

PRINTED BY SETTEN & SON, ROLLE STREET.

REPORT.

February, 1908.

To the Chairman and Members of the Exmouth Urban District Council.

Gentlemen,

In presenting to you my Annual Report I have pleasure in congratulating the Council upon what is proved by statistics, in spite of the most gloomy anticipations, to have been a very favourable year from a public health point of view. The death-rate was very low. There was less than the average amount of infectious disease. The zymotic death-rate was less than half the rate for the remainder of England and Wales, and the infant mortality was almost the lowest on record.

The Exmouth Urban District.

The district is formed by the civil parishes of Littleham and Withycombe, and covers an area of 4,000 acres exclusive of water.

The town is situated upon the slope of a hill facing the South-west. Speaking in general terms, it may be roughly divided into two portions : a low-lying portion near the sea level, of which the subsoil consists of sand and alluvial deposit—and a higher portion rising to an elevation of 150ft., situated on a subsoil of clay marl overlying the new red sandstone, and containing in many places veins and patches of coarse gravel.

This clay subsoil, which cannot usually be described as good from a sanitary point of view, is in the case of Exmouth redeemed by the fact that it is nowhere level, the surface everywhere having a good fall towards the sea, thus securing the rapid drainage of surface water, comparative dryness of subsoil and excellent sites for building.

It is in the higher parts of the town that most of the better class houses have been built, and building is still being extensively carried on. The houses of the working classes are practically confined to the lower level, which is for sanitary reasons to be deplored. The fact that practically all the land on the eastern and higher side of the town is leasehold, and a restriction is placed upon the erection of houses below a certain value, is, for economic reasons, no doubt, satisfactory, but from the standpoint of sanitation is to be regretted, because it forces the extension of working-class dwellings in one direction only, viz., in the direction of Withycombe, along the surface of the Marsh, on made ground.

Climate.—The climate of Exmouth is remarkable for its equability. It is cool in summer and comparatively warm in winter.

The mean temperature last year for the six months from from April to September inclusive was 55·63° and the highest temperature registered during the summer was 79·5°

The mean temperature for the six winter months was 45·47° and the mean range for the year was 11·54°

The rainfall is probably less than that of any other place on the South Devon coast. Last year rain fell on 191 days, making a total rainfall of 26·55 inches.

Sunshine was registered on 317 days, the total duration for the year amounting to 1625·52 hours, 285·33 hours less than in 1906.

These conditions of mildness and equability of climate, coupled with a fresh, keen atmosphere, which prevents it from being enervating, low rainfall and abundant sunshine, render Exmouth an ideal place of residence for those suffering from asthma and bronchitis, for the aged and infirm, and for young children, who, by being enabled to spend most of their time in the open air, acquire a stock of health which lays the foundation for a vigorous adult life.

WATER SUPPLY.

The Exmouth water supply is derived from an upland surface gathering ground, situated some three miles from the town. The watershed consists of two distinct drainage areas —Squabmoor and Yettington—having a total area of 725 acres, and is composed of :—

Moorland	571·571	acres
Woods	73·387	,,
Pasture...	38·503	,,
Cultivated land	39·635	,,
Orchard	1·904	,,
Total	725·000	,,

The water is stored in the impounding reservoir at Squabmoor, which has a capacity of 12¾ million gallons, and is situated at an elevation of 264·75ft. The accompanying report of a recent analysis shews that both the chemical and bacterial purity of the water are maintained at a very high standard, equal to that of any similar water supply in the country, and superior to most.

Analysis.

Filtered water taken from Service Reservoir :—

Qualitative Physical Characters :—

Colour	Yellowish tint.
Taste	Normal.
Odour...	None.
Suspended matter	Nothing.

Quantitative Chemical Data :—

Mineral matter	5·4 grains per gall.
Loss on ignition	1·1 ,, ,, ,,
Total solid residue	6·5 ,, ,, ,,
Characters on ignition	Slight charring
Chlorides, expressed as Chlorine	1·65 grains per gall.

(Equivalent to 2·7 grains of Sodium Chloride.)

Temporary hardness	0·8	grains per gall.
Permanent hardness	1·03	,, ,, ,,
Total hardness (reckoned as Calcium Carbonate) ...	1·83	,, ,, ,,
Nitrites	0·	,, ,, ,,
Nitrates, expressed as Nitrogen...	0.08	,, ,, ,,
Saline Ammonia	0·0003	,, ,, ,,
Albuminoid Ammonia	0·004	,, ,, ,,
Oxygen absorbed in 15 minutes...	0	,, ,, ,,
Oxygen absorbed in 4 hours ...	0·067	,, ,, ,,
Poisonous metals...	absent	
Phosphates	0	,, ,, ,,
Iron	0	,, ,, ,,

Enumeration of Bacteria.

Micro-organism growing in beef-peptone gelatine.

Number of Colonies per cubic centimetre, 3.

Micro-organisms growing in distilled water gelatine.

Number of Colonies per cubic centimetre, 7.

As the result of three successive years of low rainfall the water in the reservoir sank to an abnormally low level, and at the latter end of August it became necessary to restrict the supply to the town.

There was never anything of the nature of a water famine, and nothing but temporary inconvenience was suffered. The position of the town when the supply was at its lowest was no worse than the normal position of many towns less advantageously situated than Exmouth—nevertheless, something like a panic was created in the district as the result of the grossly exaggerated reports set about by irresponsible individuals who had no real knowledge of the circumstances. One of the Exeter papers especially distinguished itself by the ingenious manner in which it made a grain of truth the foundation for a vast superstructure of misrepresentation.

The experience of last summer, however, has shewn us that whilst the supply is barely sufficient for the district under normal conditions of rainfall, it is insufficient to carry us

through a succession of dry seasons, bearing in mind not only present needs but the requirements of the district in years to come. With the object of ascertaining the best means of obtaining an increased supply, the Council have sought the advice of two experts—Mr. Hill and Professor Boyd Dawkins —who agree in advising them to sink a well, as being the best and most economical method, under the circumstances, of securing a supply of pure water

Another suggestion since brought forward, not by the experts, is to obtain a supply from the river Otter. I wish to protest in the strongest possible manner against this suggestion. The Otter is seriously polluted by sewage; to render it reasonably safe for drinking purposes filtration only would not be sufficient ; the water would first have to be impounded in a reservoir of much greater capacity than the one which now serves the town. The expense of such a scheme would be enormous, and the purity of the water would always be open to question ; it would certainly be very inferior to the water with which we are now supplied. The only excuse for adopting such a suggestion would be a total absence of any other means of increasing our supply. We are not in that unfortunate position, and if we make so serious a mistake we shall richly deserve the consequences.

Sewerage.

There was an absence of flooding in the lower parts of the town throughout the year.

The numerous complaints received during the summer of the stench arising from the road ventilators—principally in the higher parts of the town—were, I think, in many instances fully justified. The cause undoubtedly was insufficient flushing of the main sewer, owing to absence of storm water.

It will be remembered that a low level sewer, 2ft. 3ins. in diameter, extends from the bottom of Raleigh Terrace through a tunnel under the Beacon and thence for upwards of a mile along the sea front to the outfall at Maer Rocks. This sewer has a fall of only 1 in 1,100, consequently

sedimentation takes place in it, and in dry seasons it becomes filled to a considerable depth with solid matter. This decomposes and sets free volumes of offensive gasses, which are distributed by the branch sewers to the road ventilators in the higher parts of the town.

I reported upon this to the Sanitary Committee some months ago, and some members of the Committee appeared to look upon my report as a reflection upon the engineer who was responsible for the construction of the sewer. Nothing of the kind was intended or implied. The engineer undoubtedly made the best of a very difficult situation ; it was impossible to obtain a greater fall. But it is possible to prevent sedimentation by the provision of a series of flushing tanks of sufficient capacity, not less than 10,000 gallons, which could be discharged from an elevation by sufficiently large openings during dry seasons when the scouring effect of storm water is not available. This would entail increased expenditure of water, but as we are compelled to materially increase our water supply the comparatively small amount necessary for flushing purposes need not be seriously considered.

It is of the greatest importance to the town, if only for æsthetic reasons, that every effort should be made to prevent smells. The public are very sensitive to them and attach, I think erroneously, great importance to them as a cause of disease. It must be confessed that the sight of the Marsh on approaching Exmouth by rail, with its ditches of stagnant water, plus, at any rate, some sewage, and the stenches which often greet them on their arrival, do not constitute an ideal welcome to a health resort.

House Drainage.—109 houses were wholly or partially redrained, and 68 w.c.'s were reconstructed or improved. The water closet system is general throughout the district.

In connection with the re-drainage of houses the smoke test was applied 214 times, and the water test 10 times. The smoke test is used in all new drainage work. I take this

opportunity of again advising the Council to adopt the water test as the standard test for house drains. The smoke test is not a sufficient proof of the soundness of new work.

Disposal of Refuse.—House refuse is removed once a week. The new destructor will be ready for use in a few weeks, when the Council will be relieved of a great difficulty in the disposal of refuse.

New Buildings.—Fifty-three plans for new houses were approved, and 55 houses were completed during the year.

Housing of the Working Classes.

There is, and always has been, since I have known the district, a great want of decent dwellings to be had at such a rental as to be within the reach of the average working man.

Many families are forced to inhabit tumble down dwellings in the centre of the town, because they have no alternative. These houses are in some instances owned by small property owners, whose sole income is derived from three or four cottages, and who cannot afford, however willing they may be, to keep their property in good sanitary condition. In some instances the situation of the houses, hemmed in on all sides by other tumble down property, is such that adequate light and ventilation are an impossibility. Such conditions are not favourable to the rearing of healthy children. Of course, matters are often made worse by want of personal cleanliness on the part of the people themselves, but it is just as true that clean and healthy dwellings make clean and healthy people as that dirty people make dirty and insanitary houses.

Workshops.—There are 105 registered workshops in the district. These have been inspected, some of them several times during the year and were found in good sanitary condition. Four lists of outworkers have been received, the number employed being 27.

Bakehouses.—The bakehouses, 22 in number, have been inspected and found in good sanitary condition. A notable improvement has taken place in the floors, irregular floors of soft brick having in many instances been substituted by good concrete and cement.

Dairies and Cowsheds.—The dairies and cowsheds were inspected several times during the year, and with respect to the dairies no serious complaint can be made as to their condition. The cowsheds, however, are very far from being perfect. Without in any way infringing the provisions of the Dairies, Cowsheds, and Milkshops Orders, of 1885 and 1886, many of the cowsheds are kept in a very filthy condition, the cows are literally caked with excrement, and the men who milk them are anything but clean. Much more stringent legislation is required to ensure a supply of pure and wholesome milk.

Common Lodging Houses.—There are only two common lodging houses in the district. These have been inspected and found to be kept in a satisfactory state.

Slaughter Houses.—The slaughter houses have been inspected and were found clean and in good sanitary condition.

Infectious Disease.

53 cases of infectious disease were notified under the Infectious Diseases Notification Act, as compared with 179 in 1906, 48 in 1905, 29 in 1904, 55 in 1903, and 65 in 1902.

Scarlet Fever.—There was a slight renewal of the epidemic which visited the district in 1906, some 31 cases being notified, none of them were fatal.

Diphtheria.—Six cases were notified, all of them of a mild type, and none of them fatal.

Typhoid Fever.—There were five notifications and no deaths.

Erysipelas.—There was one death out of the six cases notified.

Measles.—A sharp epidemic of measles occurred in the first quarter of the year, concerning which I sent a special report to the Local Government Board. It was essentially a school epidemic, and was practically confined to the children attending the elementary schools. As measles is not a notifiable disease, it is impossible to state accurately the number of cases which occurred, but from my own observation I should think that there must have been from 200 to 300.

There were seven deaths from the disease. The immediate cause of death in every instance being Broncho-pneumonia. Five of the deaths were of children under the age of 5, who ought not to have been at school. I hope sometime to see the Education Act so amended as to rigidly exclude from attendance all children under five years old. Such an amendment would materially decrease the number of children attacked by Scarlet Fever, Measles, and Whooping Cough, would be the means of saving a considerable number of lives, and a great deal of ill-health.

The powers conferred upon Sanitary Authorities by the Public Health Acts Amendment Act, 1907, will, if adopted, enable us to deal more promptly and effectually with school epidemics, and should have the effect of materially diminishing their frequency and intensity.

Isolation.—Twenty-one cases of infectious disease were removed to the Sanatorium at Whipton, at a cost of £191 17s. 8d. less £37 16s. 1d., which was recovered from the relatives of patients.

Disinfection.—53 houses were disinfected, and four lots of bedding and clothing were disinfected at Exeter. Two lots of bedding were destroyed. The new steam disinfector will be available for use in a few weeks, when we shall be enabled to deal effectually with bedding and clothing. Our methods of disinfecting these articles up to the present have been very imperfect.

The Public Elementary Schools were thoroughly cleansed and disinfected twice during the year, including furniture, slates, writing materials, &c. In future this will be done whenever the Schools are closed for the holidays.

Vital Statistics.

The statistics are based upon an estimated population of 11,340, at the middle of the year 1907.

The births numbered 194, 105 being males and 89 females, giving an average annual birth-rate of 17·1 per 1,000, the lowest on record. The rate for England and Wales was 26·3.

There were 152 deaths, equal to an average annual death-rate of 13·4 ; the rate for rural England and Wales being 14·7. Thirteen of the deaths were of infants in their first year, ten between the ages of 1 and 5, three from 5 to 15, four from 15 to 25, forty-five from 25 to 65, and seventy-seven over the age of 65.

Of the latter number forty-six died between 70 and 80, fourteen between 80 and 90, and three were over 90 years old. Thus of the total number of deaths, 40·74 per cent. died at ages over 70 years.

Deaths from Zymotic Disease.—The deaths from the seven principal epidemic diseases were 7 in number, all from broncho-pneumonia following measles, giving a zymotic death rate of 0·61 per 1,000. The rate for England and Wales was 1·26.

Infant Mortality.—The number of deaths of infants under one year old was 13, giving an infantile mortality of 67 per 1,000 children born. The following table gives the rate for the past eight years :—

1900	...	32 deaths	...	139·1 per 1,000 births.
1901	...	28 ,,	...	136·1 ,, ,, ,,
1902	...	25 ,,	...	102·04 ,, ,, ,,
1903	...	19 ,,	...	93·13 ,, ,, ,,
1904	...	15 ,,	...	60·72 ,, ,, ,,

1905	...	26	„	...	120·37 per 1,000 births.
1906	...	18	„	...	87·80 „ „ „
1907	...	13	„	...	67·00 „ „ „

The rate for England and Wales for 1907 was 106 per 1,000.

A very gratifying decrease has taken place in the infant mortality here as in the rest of the country, but there is still a great waste of infant life, owing principally to improper feeding. There should be in every town and district some means of giving instruction to girls and young women in simple hygiene as it concerns the rearing of children. Cookery classes and ambulance lectures are common, whilst the equally, if not more, important knowledge of the duties of motherhood are left to be acquired haphazard, with the consequence that they are, in too many instances, never acquired at all.

Phthisis.—There were eight deaths from phthisis, giving a phthisis mortality of 0·70 per 1,000. The rate for England and Wales is about 2·0 per 1,000.

Cancer.—Cancer caused 20 deaths, equal to a cancer mortality of 1·76 per 1,000, slightly in excess of the rate for England and Wales.

Midwives Act, 1902.

I have visited the midwives in the district twice during the year. There are four certified ; only one of whom can be considered to have any real knowledge of her work. The others are survivals of the generation of ignorant old women, to whom the very poor had to look for help before the Midwives Act came into force. That so little injury and trouble results from their employment is only another instance of the truth of the proverb, that " Providence looks after fools."

There is no reason to be dissatisfied with the Sanitary progress of the district during 1907. The town has passed through a period of considerable difficulty, but the difficulties were promptly met and grappled with as they arose, and there is every prospect of a creditable solution being found for the problems which are likely to confront us in the future.

In conclusion I have to thank the members of the Council for the courtesy which I have received from them, and my thanks are also due to the Surveyor and Sanitary Inspector for many details and figures respecting climate, water supply, and drainage which are included in this report.

I am, Gentlemen,

Yours faithfully,

O. EATON.

EXMOUTH METEOROLOGICAL REPORT FOR 1907.

	January	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.
Rainfall in Inches	1·14	1·10	0·52	3 84	2·44	1·44	1·85	0·61	0.43	6·22	2 71	4·25
Sunshine in Hours	85·21	113·46	185·93	175·71	167·87	163·23	248·19	182·69	167·23	132·06	81·96	54·04
Mean Barometer (corrected)... ...	30·376	30.075	30·244	29 790	29·866	29·909	30 064	30 064	30·128	29·621	29·970	29·731
Mean Maximum Temperature ...	45·68	48·87	52·00	53·66	57·03	61·16	65·21	66 90	65·70	58·20	52·71	48·95
Mean Minimum Temperature ...	37·36	35·11	37·33	40·73	46·42	50·53	52·55	54·30	51·60	46·76	42·08	40·73
Extreme Maximum Temperature ...	54	54	57	66	64	65	79·5	71·1	73·5	65	58·6	57·6
Extreme Minimum Temperature ...	23	23	29	34	39	45	45	46·5	40	38	34·3	30
No. of Wet Days (·01 or more) ...	15	13	12	23	17	17	12	9	8	24	17	24
No. of Bright Days	23	23	30	28	29	28	30	30	28	28	21	20

Total Rainfall—26·55 inches.
Total Sunshine—1625·52 hours.
Highest Temperature—79·5 degrees.
Lowest Temperature—23 degrees.
Mean Barometer—29·985.
Total Number of Wet Days—191 (.01 or more).
Total Number of Bright Days—317.

Table 1.

Vital Statistics of Whole District during 1907 and previous years.

Name of District—EXMOUTH URBAN.

Year.	Population estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the district	Deaths of Non-residents in Public Institutions in the district	Net Deaths at all Ages belonging to the District.	
				Under 1 Year of Age.		At all Ages.					
		Number.	Rate.	Number.	Rate per 1,000 Births registered.	Number.	Rate.			Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12
1900	10332	230	22·26	32	139·1	141	13·64			141	13·64
1901	10472	206	19·67	28	136·1	163	15·56			163	15·56
1902	10645	245	22·91	25	102·04	180	16·90	7	1	179	16·76
1903	10774	204	18·93	19	93·13	140	12·98	3		140	12·98
1904	10905	247	22·64	15	60·72	152	13·93	5	1	151	13·84
1905	11040	216	19·56	26	120·37	170	15·39	6	1	169	15·21
1906	11171	205	18·35	18	87·80	150	13·42	7	2	148	13·24
1907	11340	194	17·1	13	67·00	152	13.40	7	1	151	13·31

Area of District in acres (exclusive of area covered by water)—4000.

Total population at all ages—10472.
Number of inhabited houses—2218.
Average number of persons per house—4·72.

} At Census of 1901.

Table III.

Cases of Infections Disease notified during the Year 1907

Name of District—EXMOUTH URBAN.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.						
	AT ALL AGES.	At Ages—Years.					
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards
Small-pox							
Cholera							
Diphtheria ...	6	.....	.....	1	3	2	
Membranous croup...							
Erysipelas	9	.....	.....	.....	1	5	3
Scarlet fever ...	31		3	21	6	1	
Typhus fever ...							
Enteric fever ...	5	.....	.....	.....	4	1	
Relapsing fever ...							
Continued fever ...							
Puerperal fever ...	1	.....	.....	.....	.....	1	
Plague							
Phthisis	1	.....	.....	.....	.....	1	
Totals	53		3	22	14	11	3

Isolation Hospital—WHIPTON NEAR EXETER; DISTANCE 11 MILES.

Table IV.

Causes of, and Ages at, Death during Year 1907.

Name of District EXMOUTH URBAN.

Causes of Death.	Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District.							Total Deaths whether of Residents or non Residents in Public Institutions in the District.
	ALL AGES	Under 1 year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards	
1	2	3	4	5	6	7	8	9
Small-pox								
Measles	7	1	5	...	1			
Scarlet fever								
Whooping-cough								
Diphtheria and membranous croup								
Croup								
Fever { Typhus								
Fever { Enteric								
Fever { Other continued ...								
Epidemic influenza ...	2	1	...	...	...	1		
Cholera								
Plague								
Diarrhœa								
Enteritis								
Puerperal fever								
Erysipelas	1	...	...	...	1			
Other septic diseases ...								
Phthisis (Pulmonary Tuberculosis	8	...	...	...	...	6	2	
Other tubercular diseases ...	4	1	1	..	1	1		
Cancer, malignant disease...	20	...	...	...	...	7	13	
Bronchitis	10	1	...	...	...	2	7	
Pneumonia	10	3	3	...	...	1	3	
Pleurisy	1	...	...	...	...	...	1	
Other diseases of Respiratory organs								
Alcoholism } Cirrhosis of liver }	1	...	...	...	...	1		
Venereal diseases								
Premature birth	1	1						
Diseases and Accidents of parturition								
Heart Diseases ...	17	...	...	...	...	6	11	
Accidents	7	...	1	1	...	3	2	
Suicides	1	...	...	...	...	1		
All other causes	62	5	...	2	1	16	38	
All causes	152	13	10	3	4	45	77	7

Table V.

URBAN DISTRICT OF EXMOUTH.

INFANTILE MORTALITY DURING THE YEAR 1907.

Deaths from stated Causes in Weeks & Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
ALL CAUSES.	Certified	...	...	...	...	.....	...	...	...	...	...	...	...	...	...	...	...	
	Uncertified...	...	...	...	...	.....	...	...	...	...	...	...	...	...	...	...	...	
Common Infectious Diseases.	Small-pox																	
	Chicken-pox																	
	Measles																	
	Scarlet fever																	
	Diphtheria: Croup																	
	Whooping Cough																	
Diarrhœal Diseases.	Diarrhœa, all forms... ...																	
	Enteritis, Muco-enteritis, Gastro-enteritis																	
	Gastritis, Gastro-intestinal Catarrh																	
Wasting Diseases.	Premature Birth	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
	Congenital Defects																	
	Injury at Birth																	
	Want of Breast-milk Starvation																	
	Atrophy, Debility, Marasmus	2	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	3
Tuberculous Diseases	Tuberculous Meningitis ...	...	...	...	...	.....	...	...	...	...	...	...	1	...	...	...	...	1
	Tuberculous Peritonitis Tabes Mesenterica																	
	Other Tuberculous Diseases																	
Other Causes.	Erysipelas																	
	Syphilis																	
	Rickets																	
	Meningitis (*not Tuberculous*)																	
	Convulsions	...	..	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1
	Bronchitis	...	...	...	...	.....	1	...	...	...	...	...	...	...	...	...	...	1
	Laryngitis																	
	Pneumonia...	...	...	...	...	.....	1	...	1	...	...	...	1	...	...	1	...	4
	Suffocation, overlaying ...																	
	Other Causes	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	2
		4		1		5	3		1				3			1		13

Births in the year { legitimate } 194 { illegitimate }

Deaths in the year { legitimate infants } 13 { illegitimate „ }

Population, estimated to middle of 1907, 11,340.

Deaths from all Causes at all Ages 152.